TP-118-03
April 8, 1994

U.S. DEPARTMENT OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

LABORATORY TEST PROCEDURE

FOR

FMVSS 118

Power-Operated Window, Partition, and Roof Panel Systems

SAFETY ASSURANCE
Office of Vehicle Safety Compliance
Room 6115, NSA-30
400 Seventh Street, SW
Washington, DC 20590

OVSC LABORATORY TEST PROCEDURE NO. 118
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1. PURPOSE AND APPLICATION

The Office of Vehicle Safety Compliance (OVSC) provides contracted laboratories with Laboratory Test Procedures (TPs) which serve as guidelines for obtaining compliance test data. The data are used to determine if a specific vehicle or item of motor vehicle equipment meets the minimum performance requirements of the subject Federal Motor Vehicle Safety Standard (FMVSS). The purpose of the OVSC Laboratory Test Procedures is to present a uniform testing and data recording format, and provide suggestions for the use of specific equipment and procedures. Any contractor interpreting any part of an OVSC Laboratory Test Procedure to be in conflict with a Federal Motor Vehicle Safety Standard or observing any deficiencies in a Laboratory Test Procedure is required to advise the Contracting Officer's Technical Representative (COTR) and resolve the discrepancy prior to the start of compliance testing.

Contractors are required to submit a detailed test procedure to the COTR before initiating the compliance test program. The procedure must include a step-by-step description of the methodology to be used.

The OVSC Laboratory Test Procedures are not intended to limit or restrain a contractor from developing or utilizing any testing techniques or equipment which will assist in procuring the required compliance test data.

NOTE: The OVSC Laboratory Test Procedures, prepared for use by independent laboratories under contract to conduct compliance tests for the OVSC, are not intended to limit the requirements of the applicable FMVSS(s). In some cases, the OVSC Laboratory Test Procedures do not include all of the various FMVSS minimum performance requirements. Sometimes, recognizing applicable test tolerances, the Test Procedures specify test conditions which are less severe than the minimum requirements of the standards themselves. Therefore, compliance of a vehicle or item of motor vehicle equipment is not necessarily guaranteed if the manufacturer limits certification tests to those described in the OVSC Laboratory Test Procedures.

2. GENERAL REQUIREMENTS

FMVSS 118 requires manufacturers of passenger cars, multipurpose passenger vehicles and trucks with a gross vehicle weight rating (GVWR) of 10,000 pounds or LESS to install power window, partition and roof panel systems which may be **closed only** in the following circumstances in order to minimize the likelihood of death or injury from accidental operation.

A. When the key that controls activation of the vehicle's engine is in the "ON" "START", or "ACCESSORY" position

B. By muscular force unassisted by a vehicle power source

C. Upon continuous activation by a locking system on the exterior of the vehicle

D. Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel from a distance of more than 6 meters from the vehicle;

E. During the interval between the time the locking device which controls the activation of the vehicle's engine is turned "OFF" and the opening of either of a two-door vehicle's doors or, in the case of a vehicle with more than two doors, the opening of either of its front doors;

F. If the window, partition, or roof panel is in a static position before starting to close and in that position creates an opening so small that a 4 mm diameter semi-rigid cylindrical rod cannot be placed through the opening at any location around its edge; or

G. Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel if the device and the vehicle are separated by an opaque surface and provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel from a distance of more than 11 meters from the vehicle

H. If the window, partition or roof panel system is equipped with a reversal system which can reverse direction before contacting, or before exerting a squeezing force of 100 newtons or more on, any semi-rigid circular cylindrical rod from 4 mm to 200 mm in diameter that is placed through the window, partition or roof panel system opening at any location.

2. GENERAL REQUIREMENTS....Continued

(1) Upon such reversal, the window, partition or roof panel system must open to one of the following positions, at the manufacturer's option:

(A) A position that is at least as open as the position at the time closing was initiated;

(B) A position that is not less than 125 millimeters more open than the position at the time the window reversed direction; or

(C) A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening.

(2) The test rod is placed through the window, partition or roof panel opening from the inside of the vehicle such that the cylindrical surface of the rod contacts any part of the structure with which the window, partition or roof panel mates.

(3) The force-deflection ratio of the test rod is at least 65 N/mm for a rod 25 mm or smaller in diameter, and at least 20 N/mm for a rod larger than 25 mm in diameter.

3. SECURITY

The contractor shall provide appropriate security measures to protect the OVSC test vehicles from unauthorized personnel during the entire compliance testing program. The contractor is financially responsible for any acts of theft and/or vandalism which occur during the storage of test vehicles. Any security problems which arise shall be reported by telephone to the Industrial Property Manager (IPM), Office of Contracts and Procurement (OCP), within 2 working days after the incident. A letter containing specific details of the security problem will be sent to the IPM (with copy to the COTR) within 48 hours.

The contractor shall protect and segregate the data that evolves from compliance testing before and after each vehicle test. No information concerning the vehicle safety compliance testing program shall be released to anyone except the COTR, unless specifically authorized by the COTR or the COTR's Branch or Division Chief.

NO INDIVIDUALS, OTHER THAN CONTRACTOR PERSONNEL DIRECTLY INVOLVED IN THE COMPLIANCE TESTING PROGRAM, SHALL BE ALLOWED TO WITNESS ANY VEHICLE COMPLIANCE TEST UNLESS SPECIFICALLY AUTHORIZED BY THE COTR.

4. GOOD HOUSEKEEPING

Contractors shall maintain the entire vehicle compliance testing area, test fixtures and instrumentation in a neat, clean and painted condition with test instruments arranged in an orderly manner consistent with good test laboratory housekeeping practices.

5. TEST SCHEDULING AND MONITORING

The contractor shall submit a test schedule to the COTR prior to testing. Tests shall be completed as required in the contract. Scheduling shall be adjusted to permit sample motor vehicles to be tested to other FMVSS as may be required by the OVSC. All testing shall be coordinated to allow monitoring by the FMVSS No. 118 COTR.

6. TEST DATA DISPOSITION

The contractor shall make all vehicle preliminary compliance test data available to the COTR on location within 4 hours after the test. Final test data shall be furnished to the COTR within 5 working days. Additionally, the contractor shall analyze the preliminary test results as directed by the COTR.

All backup data sheets, technical notes, etc., shall be either sent to the COTR or destroyed at the conclusion of each delivery order, purchase order, etc.

7. GOVERNMENT FURNISHED PROPERTY (GFP)

ACCEPTANCE OF TEST VEHICLES

The Contractor has the responsibility of accepting test vehicles from either a new vehicle dealer or a vehicle transporter. In both instances, the contractor acts in the OVSC's behalf when signing an acceptance of the test vehicle(s). If the test vehicle(s) is(are) delivered by a dealer, the contractor must check to verify the following:

A. All options listed on the "window sticker" are present on the vehicle

B. There are no dents or other interior or exterior flaws

C. The vehicle has been properly prepared and is in running condition

D. The test vehicle contains an owner's manual, warranty document, consumer information, and extra set of keys.

Any vehicle which is delivered by a government contracted transporter contractor should be checked for damage which may have occurred during transit.

A "Test Vehicle Condition" form will be supplied to the contractor by the COTR when the test vehicle is transferred from the new vehicle dealer or between test contracts. The upper half of the form describes the test vehicle in detail, and the lower half provides space for a detailed description of the post test condition. Test Vehicle Condition forms must be returned to the COTR with the copies of the Final Test Report or the reports will NOT be accepted.

NOTIFICATION OF COTR

The COTR must be notified within 24 hours after a test vehicle has been delivered.

8. CALIBRATION OF TEST INSTRUMENTS

Before the contractor initiates the safety compliance test program, a test instrumentation calibration system will be implemented and maintained in accordance with established calibration practices. Guidelines for setting up and maintaining such calibration systems are described in MIL-C-45662A, "Calibration System Requirements". The calibration system shall be set up and maintained as follows:

A. Standards for calibrating the measuring and test equipment will be stored and used under appropriate environmental conditions to assure their accuracy and stability.

B. All measuring instruments and standards shall be calibrated by the contractor, or a commercial facility, against a higher order standard at periodic intervals NOT TO EXCEED TWELVE (12) MONTHS! Records, showing the calibration traceability to the National Institute of Standards and Technology (NIST), shall be maintained for all measuring and test equipment.

C. All measuring and test equipment and measuring standards will be labeled with the following information:

(1) Date of calibration
(2) Date of next scheduled calibration
(3) Name of the technician who calibrated the equipment

D. A written calibration procedure shall be provided by the contractor which includes as a minimum the following information for all measurement and test equipment:

(1) Type of equipment, manufacturer, model number, etc.
(2) Measurement range
(3) Accuracy
(4) Calibration interval
(5) Type of standard used to calibrate the equipment (calibration traceability of the standard must be evident)

E. Records of calibration for all test instrumentation shall be kept by the contractor in a manner which assures the maintenance of established calibration schedules. All such records shall be readily available for inspection when requested by the COTR. The calibration system will need the acceptance of the COTR before the test program commences.

9. PHOTOGRAPHIC DOCUMENTATION

Photographs shall be black and white, 8 x 10 inches, and legible. A tag, label, or placard identifying the test vehicle model and NHTSA number shall appear in each photograph and be legible. Each photograph shall be labeled as to subject matter. As a minimum, the following photographs shall be included:

A. 3/4 frontal view from right side

B. 3/4 rear view from left side

C. Closeup view of vehicle's certification label

D. Closeup view of vehicle's tire information placard

E. Closeup view of vehicle's ignition switch

F. Closeup view of each power window, partition, and roof panel switch--each switch must be labeled

G. Closeup view of power window, partition, and roof panel master switch--labeled

H. Closeup view of remote control

I. Closeup view of remote control receiver(s)

J. Photos of test instrumentation used in conducting this test with full description: may be a composite photograph with instrumentation removed from vehicle

K. Test instrumentation installed on vehicle

10. DEFINITIONS

The following terms, particular to this procedure, are defined below:

POWER OPERATED ROOF PANEL SYSTEMS

Moveable panel in the vehicle roof which close by vehicle supplied power either by a sliding or hinged motion, and do not include automotive convertible top systems.

WPRP

Window, Partition, and Roof Panel

11. PRETEST REQUIREMENTS

TEST DATA LOSS

A compliance test is not to be conducted unless all of the various test conditions specified in the applicable OVSC Laboratory Test Procedure have been met. Failure of a contractor to obtain the required test data and to maintain acceptable limits on test parameters in the manner outlined in the applicable OVSC Laboratory Test Procedure may require a retest at the expense of the contractor. The retest costs will include all costs associated with conducting the retest.

The Contracting Officer of NHTSA is the only NHTSA official authorized to notify the contractor that a retest is required. The retest shall be completed within two (2) weeks after receipt of notification by the Contracting Officer that a retest is required. If a retest is conducted, no test report is required for the original test.

TEST EQUIPMENT

The following equipment shall be used when testing per this procedure:

A. Load cells or equivalent to measure window, partition, and roof panel force. 150 Newton range with accuracy of ± 1.5 Newtons at 75 newtons, maximum non-linearity of ± 3 newtons over the range, and a visual output resolution of 1.5 newtons. The load cell (test rod) force deflection ratio is at least 65 Newton/mm for a rod 25 mm or smaller in diameter, and at least 20 Newton/mm for a rod larger than 25 mm in diameter.

B. Position transducer or equivalent to measure window, partition, or roof panel opening distance, 300 mm range with accuracy of ± 1 mm in 100 mm, and visual output resolution of .01 mm.

C. Continuous recorder to provide permanent, supplemental records of window, partition, and roof panel force, distance and speed versus time. When electrical input signals to the recorder are simulated (based on data traceable to the National Institute of Standards and Technology (NIST), the accuracy of that instrument's recorded data must be verified by at least one physical check, with the entire instrument system connected.

VEHICLE PREPARATION

No special preparation of the test vehicle is required other than marking and identification.

TEST AREA

A test area meeting the following requirements shall be used for all phases:

11. PRETEST REQUIREMENTS....Continued

A. A clean, dry, level surface for parking vehicles during the conduct of the test is required.

B. The test area shall be adequate to conduct tests without deviating from schedule or abusing vehicles.

MARKING AND IDENTIFICATION OF TEST VEHICLES

Each vehicle will be completely identified prior to beginning any tests, and a vehicle identification sheet will be completed. Each power window, partition and roof panel and power window, partition and roof panel actuator shall be identified with an appropriate sticker or attached placard. Markings shall be in lettering at least 1/2 inch high and shall be capable of being easily readable in any documentary photographs.

The specimen shall be visually inspected to verify that the power window, partition and roof panel system is complete and operates in accordance with manufacturer's specifications outlined in the Vehicle Owner's Manual.

A. Determine the number and location of power window, partition and roof panels in the vehicle. Record the information as called for on the Test Vehicle Identification Sheet.

B. Determine the number and location of all interior and exterior master and individual control switches, and remote control devices. Record the information as called for on the Test Vehicle Identification Sheet.

C. Close all doors and window, partition and roof panels and turn the ignition switch to the "ON" position. Using the master control switch and the individual switches, operate each window, partition and roof panel through 2 complete open-close cycles.

D. Close all doors and window, partition and roof panels and turn the ignition switch to the "Accessory" position. Using the master control switch and the individual switches, operate each window, partition and roof panel through 2 complete open-close cycles.

NOTE: One open-close cycle consists of starting with the window, partition and roof panel in the fully closed position, moving the window, partition and roof panel to fully open and back to fully closed.

The testing laboratory will contact the COTR to resolve any matters of window, partition and roof panels failing to operate properly before proceeding with further testing of the vehicle.

12. COMPLIANCE TEST EXECUTION

12.1 Window, Partition, and Roof Panel Test Sequence

TEST SEQUENCE

A. Ignition Switch Lock-Out of Power Window, partition and roof panel Switch Test

(1) Power Window, partition and roof panel Operation With Ignition Switch In "OFF" Position

(2) Power Window, partition and roof panel Operation With Ignition Key Removed

B. Exterior Locking System Test

C. Determine type of remote actuation device; line of sight or non-line of sight.

D. Remote Actuation Device, Non-Line of Sight Test (less than 6 meters operational distance)

E. Remote Actuation Device, Line of Sight Test (less than 11 meters operational distance)

F. Window, partition, and roof panel system reverses direction before exerting a force of 100 newtons on rigid circular cylindrical rod 4 mm to 200 mm in diameter.

12.2 IGNITION SWITCH LOCK-OUT OF POWER WINDOW, PARTITION, AND ROOF PANEL SWITCH TEST (S4(a)). IF A VEHICLE DOES NOT MEET THE REQUIREMENTS OF PARTS A - E, IT MUST MEET THE REVERSAL REQUIREMENTS OF PART F TO MEET THE REQUIREMENTS OF THE STANDARD.

A. POWER Window, Partition and Roof Panel OPERATION WITH IGNITION KEY "OFF" TEST

(1) Close all doors and turn ignition switch to the "ON" or "ACCESSORY" position and open all window, partition and roof panels, then turn the ignition switch to the "OFF" position. Attempt to operate each window, partition and roof panel using the master switch and individual switches. Record the results indicating WHETHER the master and individual switches are operable for **Doors Closed** on Data Sheet 1. For any switch checked as inoperative in this section record a pass in the column adjacent. If any switch is checked as operative, continue testing that particular switch to the door open lockout option test procedure in paragraph (B) of this section.

12. COMPLIANCE TEST EXECUTION....Continued

(2) Open the left front door. Attempt to operate each window, partition and roof panel, using the master and the individual switches. Record the results indicating whether the master and individual switches are operable under **Left Door Open** on Data Sheet 1. **Repeat the above test with the right front door open and the left front door closed**. Record a pass if checked inoperative; and a fail if checked operative.

B. POWER WINDOW, PARTITION AND ROOF PANEL OPERATION WITH IGNITION KEY REMOVED TEST (S4(e))

(1) Close all doors turn ignition switch to "ON" or "ACCESSORY", and open all window, partition and roof panels and remove the key from the ignition switch. Attempt to operate each window, partition and roof panel, using the master switch and individual switches. Record the results indicating whether the master and individual switches are operable on Data Sheet 2. For any switch checked as inoperative, record a pass in the column adjacent to the appropriate switch. If any switch is checked as operative, continue testing that switch to the door open test procedure in paragraph (B) of this section.

(2) Open the left front door. Attempt to operate each window, partition and roof panel, using the master and the individual switches. Record the results indicating whether the master and individual switches are operable on Data Sheet 2. **Repeat the above test with the right front door open**. Record a pass if checked inoperative and a fail if checked operative.

C. EXTERIOR KEY LOCKING SYSTEM TEST (S4(c))

The requirement to test exterior key locking systems consists of verification that if the window, partition, and roof panel can be closed by employing a key, it must be continuously activated.

Determine if the window, partition and roof panel can be closed by direct use of a key in the control switch. Identify window, partition and roof panels which are operable. Is continuous activation required? Record the results on Data Sheet 3.

REMOTE CONTROL SYSTEMS

Separate the remote control device and the receiver by an opaque surface. If the system does not function, perform line-of-sight test, otherwise perform the non line-of-sight test.

12. COMPLIANCE TEST EXECUTION....Continued

D. CONTINUOUS ACTIVATION OF A REMOTE ACTUATION DEVICE (S4(d))

NON LINE-OF-SIGHT

Determine the maximum operating distance of the remote actuation device(s). Record the results on Data Sheet 4. If range of operation exceeds six meters in any measured direction, the window, partition, and roof panel must meet reversing requirements.

E. CONTINUOUS ACTIVATION OF A REMOTE ACTUATION DEVICE (S4(g))

LINE-OF-SIGHT

Determine the maximum operating distance of the remote actuation device(s). Record the results on Data Sheet 5. If range of operation exceeds eleven meters in any measured direction, the window, partition, and roof panel must meet reversing requirements.

F. A POWER OPERATED WINDOW, PARTITION OR ROOF PANEL SYSTEM MAY CLOSE UNDER ANY OPERATIONAL CONDITION IF THE SYSTEM REVERSES DIRECTION BEFORE CONTACTING OR EXERTING A FORCE OF 100 NEWTONS. (S5(a)(1)

(1) WPRP's that close upon a single actuation of the master or individual controls, or by a remote actuation device exceeding the operational distance requirements of S4(d) and S4(g), must reverse direction before contacting or exerting a squeeze force of 100 newtons or more on a semi-rigid cylindrical bar (or equivalent) from 4 mm to 200 mm in diameter. Determine the squeeze force for both the leading edge and top edge of power operated windows, and the leading edge and hinged side of power operated roof panels, and the leading edge of power operated partitions for semi-rigid cylindrical rods (or equivalent) of 5mm, 25mm, 50mm and 200mm in diameter. Typical placements of test rods are shown in Figure 1 on the next page. Record results on Data Sheets 6 and 7.

12. COMPLIANCE TEST EXECUTION....Continued

TYPICAL CYLINDRICAL TEST RODS PROTRUDING THROUGH SUNROOF AND WINDOW DAYLIGHT OPENINGS

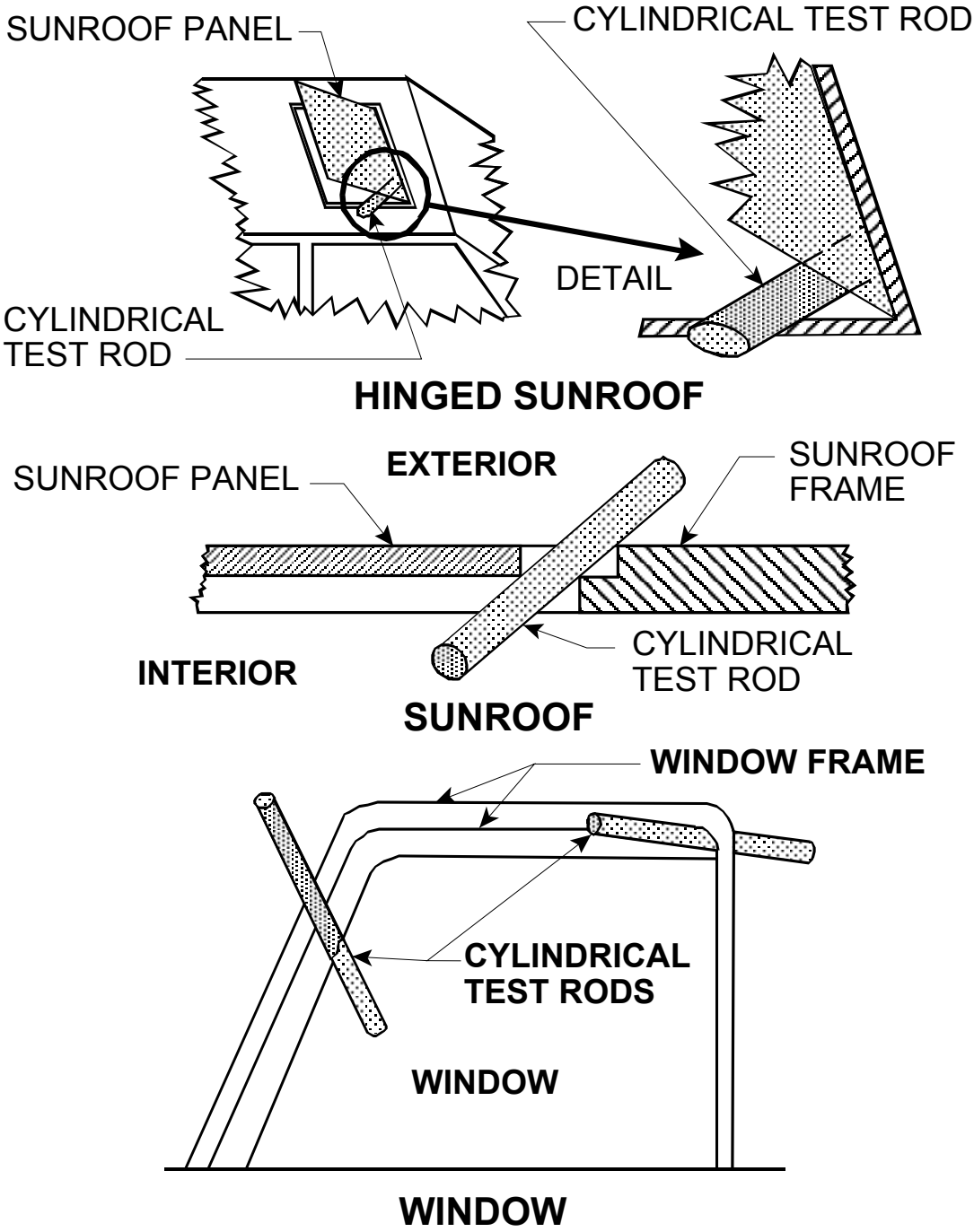


FIGURE 1

13. POST TEST REQUIREMENTS

Move test vehicles to secure area.

14. REPORTS

14.1 MONTHLY STATUS REPORTS

The contractor shall submit a monthly Test Status Report and a Vehicle Status Report to the FMVSS 118 COTR. The Vehicle Status report shall be submitted until all FMVSS 118 vehicles are transferred to another FMVSS or otherwise disposed of. Samples of the required reports are found in the report forms section.

14.2 APPARENT TEST FAILURE

Any indication of an test failure shall be communicated by telephone or to the COTR within 24 hours with written notification mailed within 48 hours (Saturday and Sunday hours excluded). A Notice of Test Failure (see report forms section) with a copy of the particular compliance test data sheet(s) and preliminary data plot(s) shall be included.

If possible, repeat that portion of the test where the failure was noted to ensure that there is a test failure.

In the event of a test failure, a post test calibration check of some critically sensitive test equipment and instrumentation (if applicable) may be required for verification of accuracy. The necessity for the calibration shall be at the COTR's discretion and shall be performed without additional costs to the OVSC.

14.3 FINAL TEST REPORTS

14.3.1 COPIES

In the case of an apparent test failure, 7 copies of the Final Test Report shall be submitted to the COTR for acceptance within 3 weeks of test completion. The Final Test Report format to be used by all contractors can be found in the "Report Section".

Where there has been no indication of an apparent noncompliance, 3 copies of each Final Test Report shall be submitted to the COTR for acceptance within 3 weeks of test completion. No payment of contractor's invoices for conducting compliance tests will be made prior to the Final Test Report acceptance by the COTR. Contractors are requested to NOT submit invoices before the COTR is provided with copies of the Final Test Report.

Contractors are required to submit the first Final Test Report in draft form within 1 week after the compliance test is conducted. The contractor and the COTR will then be able to discuss the details of both test conduct and report content early in the compliance test program.

14. REPORTS....Continued

Contractors are required to PROOF READ all Final Test Reports before submittal to the COTR. The OVSC will not act as a report quality control office for contractors. Reports containing a significant number of errors will be returned to the contractor for correction, and a "hold" will be placed on invoice payment for the particular test.

14.3.2 REQUIREMENTS

The Final Test Report, associated documentation (including photographs), are relied upon as the chronicle of the compliance test. The Final Test Report will be released to the public domain after review and acceptance by the COTR. For these reasons, each final report must be a complete document capable of standing by itself.

The contractor should use **detailed** descriptions of all compliance test events. Any events that are not directly associated with the standard but are of technical interest should also be included. The contractor should include as much **detail** as possible in the report.

Instructions for the preparation of the first three pages of the final test report are provided for standardization.

14.3.3 FIRST THREE PAGES

A. FRONT COVER

A heavy paperback cover (or transparency) shall be provided for the protection of the final report. The information required on the cover is as follows:

(1) Final Report Number such as 118-ABC-9X-001 where

- 118 is the FMVSS tested
- ABC are the initials for the laboratory
- 9X is the Fiscal Year of the test program
- 001 is the Group Number (001 for the 1st test, 002 for the 2nd test, etc.)

(2) Final Report Title And Subtitle such as

COMPLIANCE TESTING FOR FMVSS 118
Power-Operated Window, Partition and Roof Panel Systems
* *
XYZ Motor Co.
199X Deluxe 4-door sedan
NHTSA No. CX0101

14. REPORTS....Continued

(3) Contractor's Name and Address such as

COMPLIANCE TESTING LABORATORIES, INC.
4335 West Dearborn Street
Detroit, Michigan 48090

NOTE: DOT SYMBOL WILL BE PLACED BETWEEN ITEMS (3) AND (4)

(4) Date of Final Report completion

(5) The words "FINAL REPORT"

(6) The sponsoring agency's name and address as follows

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590

14. REPORTS.....Continued

B. FIRST PAGE AFTER FRONT COVER

A disclaimer statement and an acceptance signature block for the COTR shall be provided as follows:

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: _____

Approved By: _____

Approval Date: _____

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: _____

14. REPORTS....Continued

C. SECOND PAGE AFTER FRONT COVER
A completed Technical Report Documentation Page (Form DOT F1700.7) shall be completed for those items that are applicable with the other spaces left blank. Sample data for the applicable block numbers of the title page follows.

Block 1 — REPORT NUMBER

118-ABC-9X-001

Block 2 — GOVERNMENT ACCESSION NUMBER

Leave blank

Block 3 — RECIPIENT'S CATALOG NUMBER

Leave blank

Block 4 — TITLE AND SUBTITLE

Final Report of FMVSS 118 Compliance Testing of 199X XYZ Deluxe 4-door sedan, NHTSA No. CX0101

Block 5 — REPORT DATE

March 1, 199X

Block 6 — PERFORMING ORGANIZATION CODE

ABC

Block 7 — AUTHOR(S)

John Smith, Project Manager / Bill Doe, Project Engineer

Block 8 — PERFORMING ORGANIZATION REPORT NUMBER

ABC-DOT-XXX-001

Block 9 — PERFORMING ORGANIZATION NAME AND ADDRESS

ABC Laboratories
405 Main Street
Detroit, MI 48070

14. REPORTS....Continued

Block 10 — WORK UNIT NUMBER

Leave blank

Block 11 — CONTRACT OR GRANT NUMBER

DTNH22-9X-D-12345

Block 12 — SPONSORING AGENCY NAME AND ADDRESS

US Department of Transportation
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW, Room 6115 (NSA-30)
Washington, DC 20590

Block 13 — TYPE OF REPORT AND PERIOD COVERED

Final Test Report
Feb. 15 to Mar. 15, 199X

Block 14 — SPONSORING AGENCY CODE

NSA-30

Block 15 — SUPPLEMENTARY NOTES

Leave blank

Block 16 — ABSTRACT

Compliance tests were conducted on the subject 199X XYZ Deluxe 4-door sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-118-0X for the determination of FMVSS 118 compliance.

Test failures identified were as follows:

None

NOTE: Above wording must be shown with appropriate changes made for a particular compliance test. Any questions should be resolved with the COTR.

14. REPORTS....Continued

Block 17 — KEY WORDS

Compliance Testing
Safety Engineering
FMVSS 118

Block 18 — DISTRIBUTION STATEMENT

Copies of this report are available from —

NHTSA Technical Reference Division
Room 5108 (NAD-52)
400 Seventh St., SW
Washington, DC 20590
Telephone No.: 202-366-4946

Block 19 — SECURITY CLASSIFICATION OF REPORT

Unclassified

Block 20 — SECURITY CLASSIFICATION OF PAGE

Unclassified

Block 21 — NUMBER OF PAGES

Add appropriate number

Block 22 — PRICE

Leave blank

14. REPORTS....Continued

14.3.4 TABLE OF CONTENTS

Final test report Table of Contents shall include the following:

A. Section 1 — Purpose of Compliance Test

B. Section 2 — Test Data Summary

C. Section 3 — Test Data

D. Section 4 — Test Equipment List and Calibration Information (if applicable)

E. Section 5 — Photographs

F. Section 6 — Copy of Test Vehicle Owner's Manual or other document

G. Section 7 — Notice of Test Failure (if applicable)

15. DATA SHEETS

DATA SUMMARY SHEET

VEHICLE MODEL YEAR AND MAKE: _____

VEHICLE MODEL AND BODY STYLE: _____

VEHICLE NHTSA NO.: _____ ; VIN: _____

WINDOW, PARTITION,ROOF PANEL SWITCHES	INTERIOR KEY LOCKING SYSTEM		EXTERIOR LOCKING SYSTEM (PASS/FAIL)
	IGNITION KEY OFF (PASS/FAIL)	IGNITION KEY REMOVED (PASS/FAIL)	
MASTER			
LEFT FRONT (LF)			
RIGHT FRONT (RF)			
LEFT REAR (LR)			
RIGHT REAR (RR)			
PARTITION (P)			
ROOF PANEL (RP)			
TAIL GATE (TG)			
INDIVIDUAL			
LEFT FRONT (LF)			
RIGHT FRONT (RF)			
LEFT REAR (LR)			
RIGHT REAR (RR)			
PARTITION (P)			
ROOF PANEL (RP)			
TAIL GATE (TG)			

REMARKS:

15. DATA SHEETS....Continued

REMOTE ACTUATION DEVICE SUMMARY

VEHICLE ORIENTATION REMOTE ACTUATION DEVICE	NON-LINE OF SIGHT REMOTE (METERS)	LINE OF SIGHT REMOTE (METERS)
FRONT		
DRIVER SIDE		
PASSENGER SIDE		
REAR		

Vehicles in which the line of sight remote actuation devices operate at distances greater than 6 meters must be tested in accordance with WPRP Obstruction Force Reversal.

Vehicles in which the non-line of sight remote actuation devices operate at distances greater than 11 meters must be tested in accordance with WPRP Obstruction Force Reversal.

WPRP OBSTRUCTION FORCE REVERSAL SUMMARY

WINDOW, PARTITION, ROOF PANEL	FORCE TO REVERSE (NEWTONS)	DISTANCE WINDOW, PARTITION, OR ROOF PANEL OPENED UPON REVERSAL (mm)
LEFT FRONT (LF)		
RIGHT FRONT (RF)		
LEFT REAR (LR)		
RIGHT REAR (RR)		
PARTITION (P)		
ROOF PANEL (RP)		
TAIL GATE (TG)		

REMARKS:

15. DATA SHEETS....Continued
TEST VEHICLE IDENTIFICATION SHEET DATE : _____

VEHICLE IDENTIFICATION NUMBER (VIN: _____

Make: _____ ; NHTSA No: _____

Model: _____ ; Model Year: _____

Is Vehicle equipped with the following WPRP and WPRP controls?

CONTROLS	LEFT FRONT	LEFT REAR	RIGHT FRONT	RIGHT REAR	TAIL GATE	PARTITION	ROOF PANEL
Power Windows							
Interior Switches							
Master Control Panel							
Exterior Switches							
Remote Controlled							
Auto-Reverse							

Master Control Panel Location: _____

Remote Control: Line-of-Sight: _____

Non-line of Sight: _____

Descriptions: _____

_____

Window Switches: _____

Exterior Control Switch: _____

Partition: _____

Sunroof: _____

15. DATA SHEETS....Continued

DATA SHEET 1

IGNITION KEY OFF TEST

TEST VEHICLE MODEL YEAR AND MAKE: _____

TEST VEHICLE MODEL AND BODY STYLE: _____

NHTSA NO.: _____ ; VIN: _____

DATE OF TEST: _____

Check Operation of Window, Partition, Roof Panel Systems with Ignition Switch in "ON" Position (___) YES (___) NO, and "ACCESSORY POSITION" (___) YES (___) NO

WINDOW SWITCHES	DOORS CLOSED		LEFT DOOR OPEN		RIGHT DOOR OPEN		PASS/ FAIL
	INOP.	OPER.	INOP.	OPER.	INOP.	OPER.	
MASTER							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							
INDIVIDUAL							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							

REMARKS:

15. DATA SHEETS....Continued

DATA SHEET 2

IGNITION KEY REMOVED TEST

TEST VEHICLE MODEL YEAR AND MAKE: _____

TEST VEHICLE MODEL AND BODY STYLE: _____

NHTSA NO.: _____ ; VIN: _____

DATE OF TEST: _____

WINDOW SWITCHES	DOORS CLOSED		LEFT DOOR OPEN		RIGHT DOOR OPEN		PASS/ FAIL
	INOP.	OPER.	INOP.	OPER.	INOP.	OPER.	
MASTER							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							
INDIVIDUAL							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							

REMARKS:

15. DATA SHEETS....Continued

DATA SHEET 3

TEST VEHICLE MODEL YEAR AND MAKE: _____

TEST VEHICLE MODEL AND BODY STYLE: _____

NHTSA NO.: _____ ; VIN: _____

DATE OF TEST: _____

EXTERIOR KEY LOCKING CONTROL SWITCH TEST

WPRP Can Be Operated By Directly Using A Key:

YES: _____ NO: _____

IF YES: Is Continuous activation required?

YES: _____ NO: _____

NOTE: Continuous Activation is required for WPRP activation by exterior key locking system.

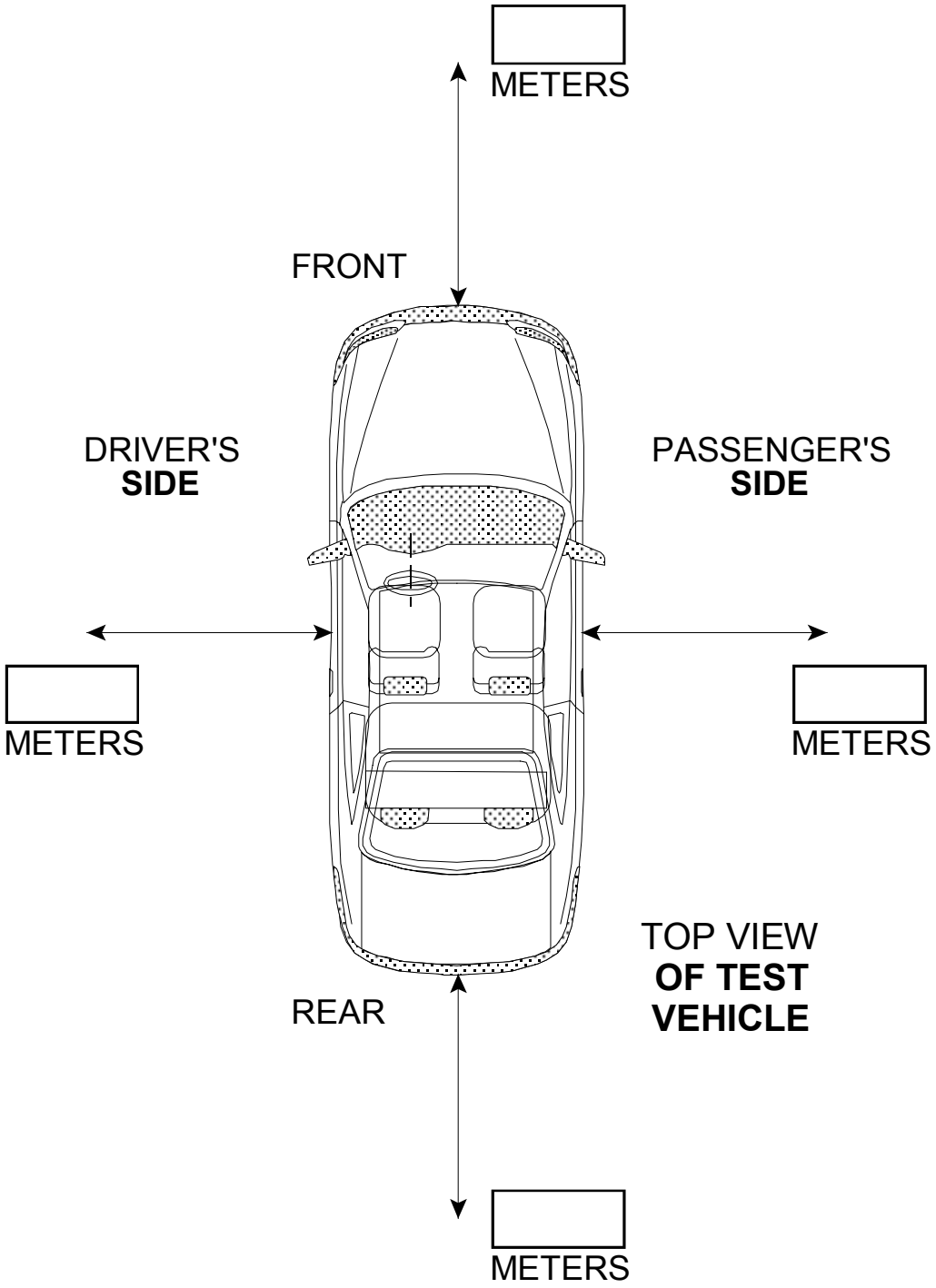
IDENTIFY WINDOW POSITIONS AND/OR PARTITION AND/OR ROOF PANEL WHICH ARE OPERABLE WITH EXTERIOR KEY.

15. DATA SHEETS....Continued

DATA SHEET 4

MAXIMUM OPERATING RANGE FOR NON LINE-OF-SIGHT REMOTE

If range of operation exceeds 6 meters in any of the below measured directions, the window, partition, and roof panel must meet reversing requirements on Data Sheets 6 and 7.

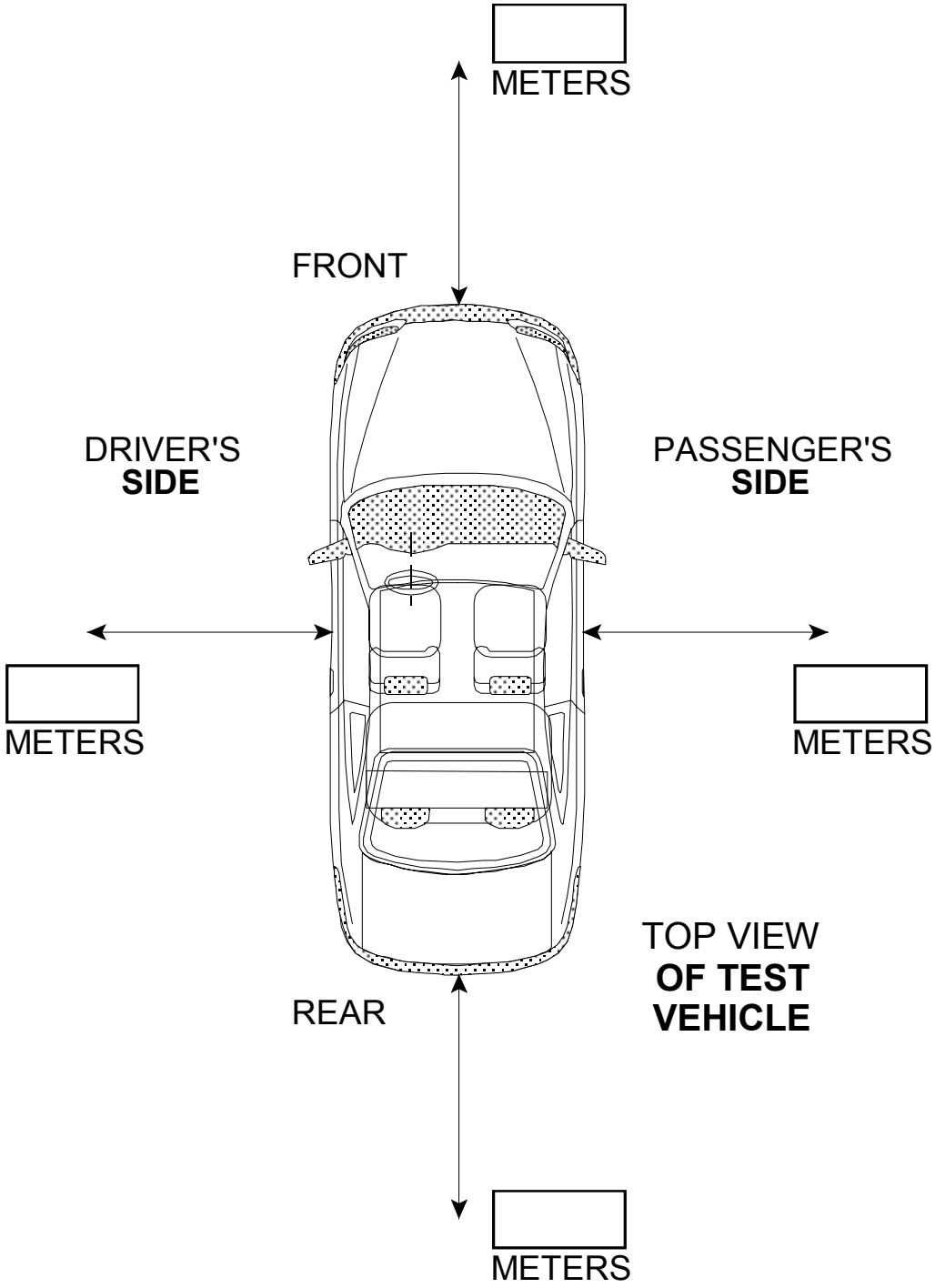


15. DATA SHEETS....Continued

DATA SHEET 5

MAXIMUM OPERATING RANGE FOR LINE-OF-SIGHT REMOTE

If range of operation exceeds 11 meters in any of the below measured directions, the window, partition, and roof panel must meet reversing requirements on Data Sheets 6 and 7.



15. DATA SHEETS....Continued

DATA SHEET 6

WPRP OBSTRUCTION FORCE REVERSAL

WPRP must reverse direction before contacting or exerting a squeezing force of 100 Newtons. Upon such reversal, the WPRP must open to one of the following positions.

A. A position that is at least as open as the position at the time closing was initiated.

B. A position that is not less than 125 mm more open that the position at the time closing was initiated.

C. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same contact point(s) as shown in Figure 1.

WINDOW, PARTITION, ROOF PANEL	FORCE MEASURED ON 5 MM OBSTRUCTION BEFORE WPRP REVERSES	DISTANCE THAT WINDOW, PARTITION, OR ROOF PANEL (WPRP) OPENS TO UPON REVERSING DIRECTION	FORCE MEASURED ON 25 MM OBSTRUCTION BEFORE WPRP REVERSES (NEWTONS)	DISTANCE THAT WINDOW, PARTITION, OR ROOF PANEL (WPRP) OPENS TO UPON REVERSING DIRECTION
Driver's Window				
Passenger Window				
Left Rear Door Window				
Right Rear Door Window				
Roof Panel				
Partition				

REMARKS:

15. DATA SHEETS....Continued

DATA SHEET 7

WPRP OBSTRUCTION FORCE REVERSAL

WPRP must reverse direction before contacting or exerting a squeezing force of 100 Newtons. Upon such reversal, the WPRP must open to one of the following positions.

A. A position that is at least as open as the position at the time closing was initiated.

B. A position that is not less than 125 mm more open that the position at the time closing was initiated.

C. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same contact point(s) as shown in Figure 1.

WINDOW, PARTITION, ROOF PANEL	FORCE MEASURED ON 50 MM OBSTRUCTION BEFORE WPRP REVERSES	DISTANCE THAT WINDOW, PARTITION, OR ROOF PANEL (WPRP) OPENS TO UPON REVERSING DIRECTION	FORCE MEASURED ON 200 MM OBSTRUCTION BEFORE WPRP REVERSES	DISTANCE THAT WINDOW, PARTITION OR ROOF PANEL (WPRP) OPENS TO UPON REVERSING DIRECTION
Driver's Window				
Passenger Window				
Left Rear Door Window				
Right Rear Door Window				
Roof Panel				
Partition				

REMARKS:

16. FORMS

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 118 TEST DATE: _____

LABORATORY: _____

CONTRACT NO.: _____ ; DELV. ORDER NO: _____

LABORATORY PROJECT ENGINEER'S NAME: _____

TEST VEHICLE DESCRIPTION: _____

_____

VEHICLE NHTSA NO.: _____ ; VIN: _____

VEHICLE MANUFACTURER: _____

TEST FAILURE DESCRIPTION: _____

_____

_____

STD. REQUIREMENT, PARAGRAPH S___ : _____

_____

_____

NOTIFICATION TO NHTSA (COTR): _____

DATE: _____ ; BY: _____

REMARKS: _____

_____

_____

_____

16. FORMS....Continued

MONTHLY TEST STATUS REPORT

FMVSS 118
DATE OF REPORT: _____

NO.	VEHICLE NHTSA NO., MAKE & MODEL	COMPLIANCE TEST DATE	PASS/ FAIL	DATE REPORT SUBMITTED	DATE INVOICE SUBMITTED	INVOICE PAYMENT DATE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

16. FORMS....Continued

MONTHLY VEHICLE STATUS REPORT

FMVSS 118

DATE OF REPORT: _____

NO.	VEHICLE NHTSA NO., MAKE & MODEL	DATE OF DELIVERY	ODOMETER READING	TEST COMPLETE DATE	VEHICLE SHIPMENT DATE	ODOMETER READING
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

APPENDIX

MOTOR VEHICLE SAFETY STANDARD NO. 118

Power-Operated Window, Partition and Roof Panel Systems

S1. PURPOSE AND SCOPE

This standard specifies requirements for power-operated window, partition and roof panel systems to minimize the likelihood of death or injury from their accidental operation.

S2. APPLICATION

This standard applies to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating (GVWR) of 10.000 pounds or less.

This standard applies to passenger cars, multipurpose passenger vehicles. and trucks with a gross vehicle weight rating (GVWR) of 10.000 pounds or less. The standard's requirements for power-operated roof panel systems need not be met for vehicles manufactured before September 1, 1993.

S3. DEFINITION

POWER OPERATED ROOF PANEL SYSTEMS

Removable panels in the vehicle roof which close by vehicle supplied power either by a sliding or hanged motion, and do not include convertible top systems.

S4. OPERATING REQUIREMENTS

Except as provided in S5, power operated window, partition, or roof panel systems may be closed only in the following circumstances:

(a) When the key that controls activation of the vehicle's engine is in the "ON," "START," or "ACCESSORY" position;

(b) By muscular force unassisted by vehicle supplied power;

(c) Upon continuous activation by a locking system on the exterior of the vehicle;

(d) Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel from a distance of more than 6 meters from the vehicle.

APPENDIX....Continued

(e) During the interval between the time the locking device which controls the activation of the vehicle's engine is turned off and the opening of either of a two-door vehicle's doors or, in the case of a vehicle with more than two doors, the opening of either of its front doors;

(f) If the window, partition, or roof panel is in a static position before starting to close and in that position creates an opening so small that a 4 mm diameter semi-rigid cylindrical rod cannot be placed through the opening at any location around its edge in the manner described in S5(b); or

(g) Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel if the device and the vehicle are separated by any opaque surface and provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel from a distance of more than 11 meters from the vehicle.

S5(a) Notwithstanding S4, a power operated window, partition or roof panel system may close if it meets the following requirements —

(1) While closing, the window, partition or roof panel system must reverse direction before contacting, or before exerting a squeezing force of 100 newtons or more on, a semi-rigid cylindrical rod from 4 mm to 200 mm in diameter that has the force-deflection ratio described in S5(c), and that is placed through the window, partition or roof panel system opening at any location, in the manner described in S5(b); and

(2) Upon such reversal, the window, partition or roof panel system must open to one of the following positions, at the manufacturer's option:

(i) A position that is at least as open as the position at the time closing was initiated;

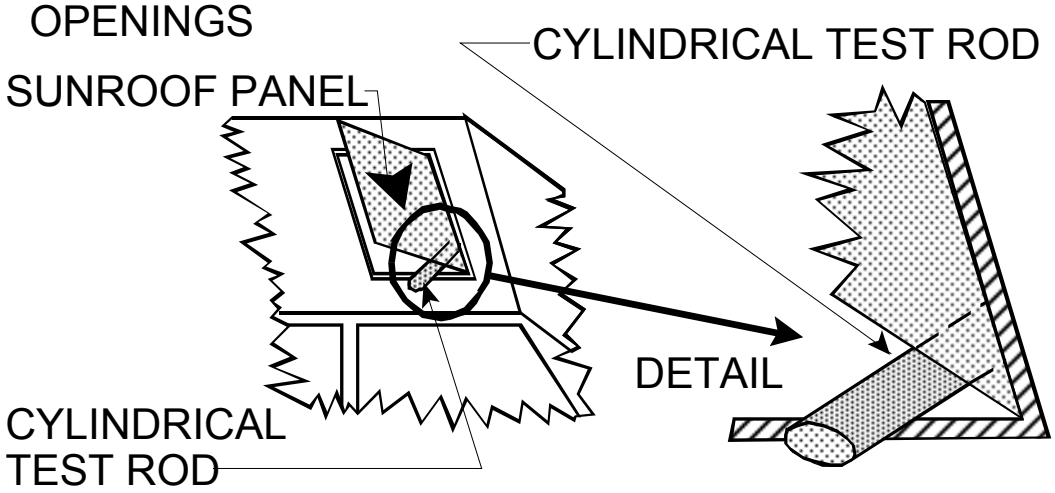
(ii) A position that is not less than 125 millimeters more open than the position at the time the window reversed direction; or

(iii) A position that permits a semi-rigid cylindrical rod that is 200 mm diameter to be placed through the opening at the same contact point(s) as the rod described in S5(a)(1).

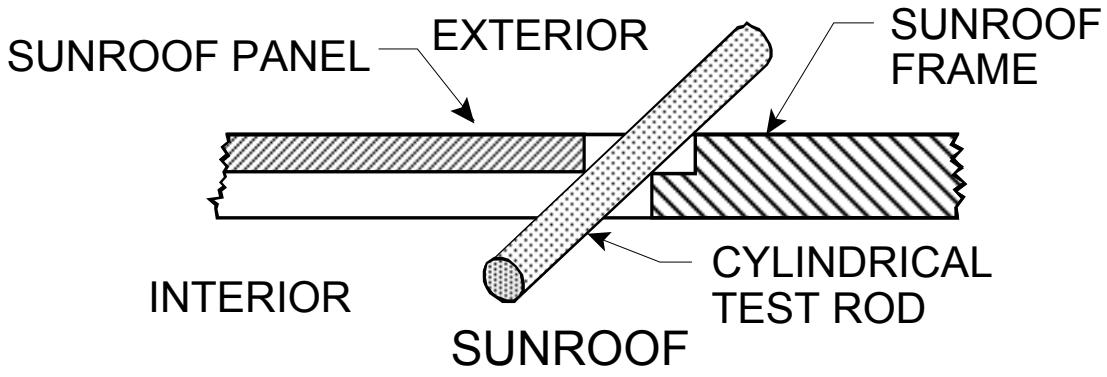
S5.(b) The test rod Is placed through the window, partition or roof panel opening from the inside of the vehicle such that the cylindrical surface of the rod contacts any part of the structure with which the window, partition or roof panel mates. Typical placements of test rods are illustrated in Figure 1.

APPENDIX....Continued

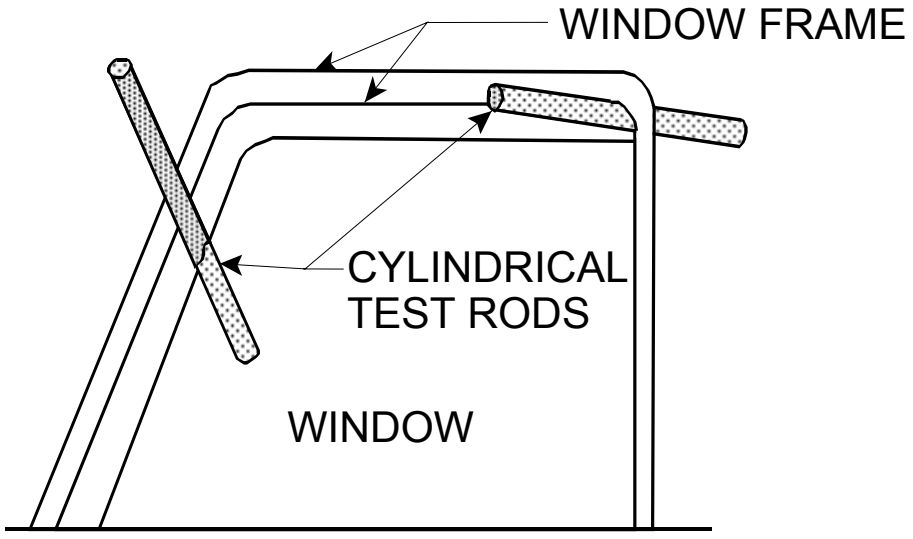
TYPICAL CYLINDRICAL TEST RODS PROTRUDING THROUGH SUNROOF AND WINDOW DAYLIGHT OPENINGS



HINGED SUNROOF



SUNROOF



WINDOW

FIGURE 1

APPENDIX....Continued

S5.(c) The force-deflection ratio of the test rod is at least 65 N/mm for a rod 25 mm or smaller in diameter, and at least 20 N/mm for a rod larger than 25 mm in diameter.